

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claim 1 (Currently Amended): A combination of a fixation means (2) for fixation of bone fragments (3, 4) at bone fractures and an extraction device for extracting the fixation means (2), the extraction device being removably connected to said fixation means (2),

the fixation means (2) comprising a sleeve (6) and at least one pin (7) provided in said sleeve (6),

the extraction device (1) comprising an inner extraction member (12) connectable removably connected to the pin (7) of the fixation means (2), an outer extraction member (13) ~~connectable~~ removably connected to the sleeve (6) of the fixation means (2), and an extraction handle (14) that rotates relative to the outer and inner extraction members (13, 12) in order to extract the pin (7) in a direction (R) of extraction relative to the outer extraction member (13) and the sleeve (6), the direction (R) of extraction extending along a longitudinal axis of the outer extraction member (13),

the inner extraction member (12) being inserted into the outer extraction member (13) and being axially movable relative to the outer extraction member (13), the outer extraction member (13) being manually holdable in order to prevent the outer extraction member (13) from rotating when the extraction handle (14) is rotated,

the outer and inner extraction members (13, 12) being respectively provided with rotary preventing members (32, 29) that directly engage one another in order to prevent the inner extraction member (12) from rotating relative to the outer extraction member (13) during extraction of the pin (7),

the rotary preventing members (32) of the outer extraction member (13) being non-circular cross-sectional parts of a through hole (33) in the outer extraction member (13), the rotary preventing members (29) of the inner extraction member (12) being non-circular cross-sectional parts,

the rotary preventing members (32) of the outer extraction member (13) are provided in a rear end portion (31) of the outer extraction member (13),

the rotary preventing members (29) of the inner extraction member (12) are provided on a rear end portion (24) of the inner extraction member (12), and

the lengths of the inner and outer extraction members (12, 13) and the location and shape of the rotary preventing members (29, 32) are chosen such that the extraction handle (14) can cooperate with the inner extraction member (12) in order to draw the inner extraction member (12) backwards in the direction of extraction (R) when the inner extraction member (12) is inserted into the outer extraction member (13) so that the rotary preventing members (29, 32) directly engage one another.

Claims 2-4 (Canceled)

Claim 5 (Previously Presented): The combination according to claim 1, wherein the extraction device (1) comprises at least one part (26 and/or 23) limiting the extraction in order to ensure that the extraction handle (14), through the inner extraction member (12), draws the pin (7) backwards relative to the sleeve (6) so that a tip (35) of the pin (7) is situated in an opening (10) of the sleeve (6), and thereby cooperates with a rear edge of the opening (10) such that the pin (7), through said cooperation with the rear edge of the opening (10), draws the sleeve (6) backwards in the direction of extraction (R) when the sleeve (6) is pulled out of the bone fragment (3, 4) by means of the extraction handle (14).

Claim 6 (Previously Presented): The combination according to claim 5, wherein the extraction limiting part (26 and/or 23) comprises one of outer threads (26) on the extraction handle (14) and inner threads (23) on the inner extraction member (12) having such length that the length of screwing together of the extraction handle (14) and the inner extraction member (12) is limited.

Claim 7 (Previously Presented): The combination according to claim 1, wherein

a front end portion (15) of the inner extraction member (12) has a hole with inner threads (16) which mesh with outer threads (17) of the pin (7), and

the hole of the inner extraction member (12) has an inlet (22) without threads, the inlet (22) tapering conically in a direction inwards into the hole.

Claim 8 (Previously Presented): The combination according to claim 1, wherein the inner extraction member (12) has a front end portion (15) with such outer dimensions that it can be inserted into a rear end portion (8) of the sleeve (6).

Claim 9 (Previously Presented): The combination according to claim 8, wherein the front end portion (15) of the inner extraction member (12), which can be inserted into a rear end portion (8) of the sleeve (6), transforms into inner portions (20) of the inner extraction member (12) having larger outer dimensions through an edge (19) which can engage a rear edge (21) of the sleeve (6) when the inner extraction member (12) is operating.

Claim 10 (Previously Presented): The combination according to claim 1, wherein

the inner extraction member (12) is an elongated rod and has a front end portion (15) with a hole which is provided with inner threads (16) which mesh with outer threads (17) on the pin (7),

the inner extraction member (12) has a rear end portion (24) with a hole with inner threads (23) which mesh with outer threads (26) on the extraction handle (14),

the outer extraction member (13) is an elongated sleeve which is open at both ends, and

the inner extraction member (12) fits into the outer extraction member and is axially displaceable in relation thereto.

Claim 11 (Previously Presented): The combination according to claim 10, wherein the inner extraction member (12) includes lateral holes (36, 37) which extend into the holes with the inner threads (16, 23) such that the holes can be flushed clean through the lateral holes (36, 37).

Claim 12 (Previously Presented): The combination according to claim 1, wherein the outer extraction member (13) has a laterally directed handle (34) for holding the outer extraction member (13) such that it does not rotate when the pin (7) is drawn in the direction of extraction (R).

Claim 13 (Previously Presented): The combination according to claim 1, wherein the device consists of only an inner extraction member (12), an outer extraction member (13) and an extraction handle (14).

Claim 14 (Previously Presented): The combination according to claim 1, wherein

the opening (10) in the sleeve (6) of the fixation means (2) is round or oval or substantially round or oval, and

the front part (11) of the pin (7) has a rounded side by means of which it can cooperate with front parts of an opening (10) in the sleeve (6), and another side, opposite to said rounded side, which is flat or substantially flat and which can cooperate with rear parts of the opening (10).

Claims 15-16 (Canceled)

Claim 17 (Currently Amended): A combination of a fixation assembly (2), which fixes bone fragments (3, 4) at bone fractures and a device for extracting the fixation assembly (2), the fixation assembly (2) comprising a sleeve (6) and at least one pin (7) provided in said sleeve (6), the extraction device (1) being removably connected to said fixation assembly (2) and comprising:

an inner extraction member (12) ~~connectable~~ removably connected to the pin (7) of the fixation assembly (2);

an outer extraction member (13) ~~connectable~~ removably connected to the sleeve (6) of the fixation assembly (2); and

an extraction handle (14) that rotates relative to the outer and inner extraction members (13, 12) in order to extract the pin (7) in a direction (R) of extraction relative to the outer extraction member (13) and the sleeve (6), the direction (R) of extraction extending along a longitudinal axis of the outer extraction member (13);

the inner extraction member (12) being insertable into the outer extraction member (13) and being axially movable relative to the outer extraction member (13), the outer extraction member (13) being manually engageable to prevent the outer extraction member (13) from rotating when the extraction handle (14) is rotated,

the outer and inner extraction members (13, 12) being provided with rotary preventing members (32, 29) that directly engage one another to prevent the

inner extraction member (12) from rotating relative to the outer extraction member (13) during extraction of the pin (7), the rotary preventing members (32) of the outer extraction member (13) being non-circular cross-sectional parts of a through hole (33) in the outer extraction member (13), the rotary preventing members (29) of the inner extraction member (12) being non-circular cross-sectional parts.

Claim 18 (Previously Presented): The combination according to claim 1, wherein the rotary preventing members (32) of the outer extraction member (13) include at least one axially extending flat surface on the outer extraction member (13), the rotary preventing members (29) of the inner extraction member (12) including at least one axially extending flat surface on the inner extraction member (12) that directly engages the at least one axially extending flat surface on the outer extraction member (13).

Claim 19 (Previously Presented): The combination according to claim 1, wherein the rotary preventing members (32, 29) prevent the inner extraction member (12) from rotating relative to the outer extraction member (13) about a longitudinal axis of the inner extraction member in first and second opposite directions.

Claim 20 (Previously Presented): The combination according to claim 17, wherein the rotary preventing members (32, 29) prevent the inner extraction member (12) from rotating relative to the outer extraction member (13) about a longitudinal axis of the inner extraction member in first and second opposite directions.

Claim 21 (New): The combination according to claim 1, wherein the inner extraction member directly engages the pin.

Claim 22 (New): The combination according to claim 17, wherein the inner extraction member directly engages the pin.

Claim 23 (New): The combination according to claim 1, wherein the extraction handle cooperates with the inner extraction member in order to draw the inner extraction member backwards relative to the outer extraction member in the direction of extraction.

Claim 24 (New): The combination according to claim 17, wherein the extraction handle cooperates with the inner extraction member in order to draw the inner extraction member backwards relative to the outer extraction member in the direction of extraction.